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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/050,104	01/18/2002	Chul-Hwan Choi	SEC.890	6556

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EXAMINER

BRAHAN, THOMAS J

ART UNIT	PAPER NUMBER
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3652

DATE MAILED: 11/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/050,104

Applicant(s)

CHOI ET AL.

Examiner

Thomas J. Brahan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13 and 14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13 and 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103.

2. Claims 13 and 14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Muka in view of Yanagita et al. Figures 5A and 5B of Muka show a semiconductor device manufacturing equipment comprising:

a transfer chamber (104);

a plurality of load lock chambers (108) connected to the transfer chamber independently of each other at a first side of the transfer chamber, some of the load lock chambers being disposed at a plurality of levels, respectively, at the first side of the transfer chamber, a number of the load lock chambers being disposed side-by-side and spaced relative to each other in a first axial direction on at least one of the levels, the first axial direction, and each of the load lock chambers having first and second doors that separate the interior of the load lock chamber from the environment outside the equipment and the interior of the transfer chamber, respectively;

a plurality of process chambers (102) in which wafers are processed, the process chambers being connected to the transfer chamber independently of each other at sides of the transfer chamber, wherein some of the process chambers are disposed at the plurality of levels, respectively, at the second side of the transfer chamber, and a number of the process chambers are disposed side-by-side and spaced relative to each other in the first axial direction on the at least one of the levels; and


a robot (106) disposed in the transfer chamber, the robot comprising a robot arm, and a wafer support member disposed at a terminal end of the robot arm so as to move with the robot arm, the robot arm being supported so as to be independently linearly translatable in a vertical direction, and rotatable about a vertical axis, and the wafer support member being supported by the robot arm so as to be extendable and retractable independently of the robot arm at the terminal end of the robot arm, wherein the robot has a working envelope that allows the wafer support member to transfer wafers between any of the load lock chambers and the respective process chamber disposed across therefrom.

The embodiment of Figures 5A and 5B of Muka varies from the claims by having the load lock chambers and the processing chambers arranged on the transfer chamber in a polar manner about the transfer robot (106) instead of being located on opposite sides of a rectangular transfer chamber in a Cartesian coordinate manner with a transfer robot that translates axially with respect to the chambers. However these two arrangements are art

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recognized equivalents. Yanagita et al shows a similar semiconductor device manufacturing equipment with a first embodiment having a transfer chamber with load lock chambers and process chambers arranged in a polar manner about a transfer robot, see figure 2, and a second embodiment having a rectangular transfer chamber with load lock chambers and process chambers arranged in a Cartesian manner about a transfer robot which also translates back and forth axially in front of the chambers, see figure 15. It would have been obvious to one of ordinary skill in the art at the time the invention was made by applicant to modify the a semiconductor device manufacturing equipment of Muka by using a rectangular transfer chamber with an axially translating robot and load lock chambers and process chamber arranged in a Cartesian manner on opposite opposing sides of the transfer chamber, instead of in a polar coordinate arrangement, as these two arrangements are art recognized equivalents, as taught by Yanagita et al.

3. Applicant's remarks in the amendment after final have been considered, but are deemed moot in view of the above new rejections. An inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas J. Brahan whose telephone number is (703) 308-2568. The examiner's supervisor, Ms. Eileen Lillis, can be reached at (703) 308-3248. The fax number for all patent applications is (703) 872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Questions regarding access to the Private PAIR system, should be directed to the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 11/15/04
Thomas J. Brahan
Primary Examiner
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